

**Remarks/Arguments:**

The pending claims are 1-15. The applicant thanks the Examiner for indicating in paragraph 2 of the Office Action that claims 10 and 11 would be allowable if they were rewritten in independent form. Claims 10 and 11 have not been rewritten at this time because applicant believes that claim 6 is allowable. Claims 1, 2, 6, 8, and 9 have been amended. Claim 15 has been added. No new matter is introduced therein.

Applicant notes that the Examiner initialed a Form 1449 date stamped in January 2002 and a Form 1449 date stamped in May 2003. Applicant requests that the Examiner also initial another Form 1449 that was filed on December 4, 2000.

Paragraph 1 of the Office Action has objected to claim 14. Applicant notes that claim 14 had been amended in the Preliminary Amendment filed on December 4, 2004. Accordingly, applicant requests that the objection to claim 14 be withdrawn.

In paragraph 3 of the Office Action, claims 8 and 9 have been rejected to because of a misspelling. Since the misspelling has been corrected, applicant requests that the objection to claims 8 and 9 be withdrawn.

In paragraphs 5 and 6 of the Office Action, claims 1 and 2 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1 and 2 have been amended in order to comply with the Office Action's requirements. Accordingly, applicant requests that these rejections be withdrawn.

In paragraph 8 of the Office Action, claims 6-9, 12, and 13 have been rejected under 35 U.S.C. § 102(b) as anticipated by Kutsumi et al (U.S. Patent No. 5,353,221).

The Office Action contends that Figure 10, sub-block S13 and col. 3, lines 1-7 of Kutsumi disclose the phrase extracting section recited in claim 6. Kutsumi does not have a phrase extracting section as recited in claim 6. The invention recited in claim 6 calculates a frequency of adjacency in a source language sentence and in a target language sentence. Kutsumi does not couple words and parts of speech of a high frequency of adjacency. Specifically, Step S13 of Kutsumi operates only on the input sentence as stated beginning at col. 9, line 1.

The Office Action contends that col. 3, lines 48-59 of Kutsumi describes the phrase determining section recited in claim 6. Claim 6 compares partial phrases of the source

language and the target language. The comparison determines corresponding partial sentences. The cited portion of Kutsumi only analyzes the input sentence.

The Office Action contends that the dictionary shown in Figure 3, sub-block 15 of Kutsumi discloses the phrase dictionary recited in claim 6. The dictionary in Kutsumi only operates on the input sentence. Claim 6 recites a phrase dictionary that stores corresponding phrases from both the source language and the target language.

The Office Action contends that Figure 4 of Kutsumi discloses the last paragraph of claim 6 because the Kutsumi dictionary matches corresponding phrases. The dictionary in this paragraph of claim 6 does not make a comparison. The match recited in claim 6 is performed by a language transference. The language transference matches the input sentence with the corresponding partial phrases stored in the phrase dictionary.

Accordingly, amended claim 6 is not subject to rejection under 35 U.S.C. § 102(b) as anticipated by Kutsumi. Furthermore, since claims 7-9, 12, 13 depend from amended claim 6, they are also not subject to rejection under 35 U.S.C. § 102(b) as anticipated by Kutsumi.

In paragraph 10 of the Office Action, claims 1-5 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Kutsumi et al. in view of Su (U.S. Patent No. 5,418,717). As noted above, paragraph 5 of the Office Action contended that various parts of claim 1 were not clear. Consequently, paragraph 5 of the Office Action stated that those parts of claim 1 would not be treated on the merits for purposes of art-related examination; namely, the part of the claim 1 beginning with the phrase "hereinafter, such a sentence. . .target language sentence." Since claim 1 has now been amended in accordance with the Office Action's requirements, applicant requests that all of claim 1 now be treated on the merits.

The first part of amended claim 1 recites a storing means that stores language rules. The language rules are obtained by training grammatical or semantic restrictions rules from a training database. The training database includes a parallel translation corpus. In the parallel translation corpus, a source language sentence, that has undergone a corresponding target language transference, is paired with a target language sentence. The target language sentence comprises the source language sentence that has undergone the corresponding language transference. This combination of features is not shown in Kutsumi.

Although Kutsumi has a memory 16 for storing a translation dictionary and rules (col. 4, lines 51-53), the memory does not store a pairing of a source language sentence "with a target language sentence comprising the source language that has undergone the corresponding language transference." Instead, in Kutsumi, if there is an erroneous recognition, a user must use keyboard 14 to provide clarifying instructions to the input sentence. (col. 16, lines 50-55). The system then processes the instructions (col. 16, line 55 to col.17, line 47) and the translated result is printed. (col. 4, lines 67-68).

In amended claim 1, the stored language rules are used in a speech recognizing section and in a language transferring section. Specifically, amended claim 1 recites "a speech recognizing section which section which performs speech recognition on input speech by using the stored language rules." Similarly, amended claim 1 recites "a language transferring section which transfers a sentence. . .by using the same language rules as that used in said speech recognizing section." Neither Kutsumi nor Su disclose or suggest a storing means, and a speech recognizing section, and a language transferring section all of which either store or use the same language rules as defined in the first paragraph of amended claim 1.

Accordingly, amended claim 1 is not subject to rejection under 35 U.S.C. § 103(a) as unpatentable over Kutsumi in view of Su. Since claims 2-5 depend from claim 1, they are also not subject to the same rejection.

Claim 15 has been added. Claim 15 corresponds to claim 6 with additional language. A comparison of portions of amended claim 6 with new claim 15 follows:

Claim 6	Claim 15
a parallel-translation corpus	a parallel-translation corpus <u>prepared for learning</u>
a phrase extracting section which calculates a frequency of adjacency of words or parts of speech in a source language sentence and a target language sentence in said parallel-translation corpus, and couples words and parts of speech of a high frequency of adjacency to extract partial sentences in each of which semantic consistency is formed	a phrase extracting section which calculates a frequency of adjacency of words or parts of speech in a source language sentence and a target language sentence in said parallel-translation corpus, and couples words and parts of speech of a high frequency of adjacency to extract <u>automatically</u> partial sentences in each of which semantic consistency is formed <u>without using any grammatical rule</u>

Claim 15 recites that the parallel-translation corpus is "prepared for learning." This recitation is supported at least by page 18, lines 9-10, 16-17; page 20, lines 14-15; page 29, line 12. The Office Action contends that Figure 9, subblock S3 anticipates this element. Applicant disagrees. Step S3 is part of the process of analyzing an input sentence. (col. 9, lines 10-13; col. 10, lines 27-39). Step S3 in Kutsumi is not prepared for learning as recited in claim 15.

Claim 15 also recites that the phrase extracting section extracts "automatically partial sentences in each of which semantic consistency is formed without using any grammatical rule." The Office Action contends that this feature is shown by Figure 10, Step S13 and col. 3, lines 1-7. Applicants disagree. Claim 15 states that the phrase extracting section "couples words and parts of speech" with "semantic consistency" that is "formed without using any grammatical rule." In contrast, Kutsumi relies on grammatical rules. See, e.g., col. 2, lines 35-36 ("using grammatical rules stored in the dictionary look up"); col. 4, lines 51-53 refer to "a memory 16 for storing a translation dictionary and tree-structure transforming rules such as grammatical rule and breaking rules;" col. 5, lines 50-51 state that "it is possible to obtain the grammatical information about a part of speech for each word." In fact, the part of column 3 identified by the Office Action refers to part of speech information.

Accordingly, the invention recited in claim 15 extracts phrases by using a frequency of adjacency of words and a co-occurrence relation of a parallel translation corpus. By using a frequency of adjacency, the invention automatically extracts a boundary of partial sentences forming semantic consistency without setting language rules such as grammar beforehand, if large amounts of training sentences exist.

In contrast, in the invention described in Kutsumi, it may be difficult to analyze speech which is spoken with incorrect grammar. For example, the method described in Kutsumi cannot extract phrases from speech in which parallel phrases are omitted.

In applicant's invention, however, as recited in claim 15, characteristics of word orders depending on training sentences (a frequency of adjacency of words) and pairs of words which always appear by co-occurring with source language sentences and target language sentences are trained statistically by using training sentences. As a result, applicant's invention analyzes sentences even when the input sentences are grammatically incorrect.

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Accordingly, claim 15 is not subject to rejection under 35 U.S.C. § 102(b) as anticipated by Kutsumi et al.

For all of the above reasons, applicant solicits allowance of the entire application.

Respectfully submitted,

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